

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Fixed and Mobile Satellite Service Bands at)	ET Docket No. 10-142
1525-1559 MHz and 1626.5-1660.5 MHz,)	
1610-1626.5 MHz and 2483.5-2500 MHz,)	
and 2000-2020 MHz and 2180-2200 MHz)	

REPLY COMMENTS OF IRIDIUM SATELLITE LLC

Iridium Satellite LLC (“Iridium”) submits these reply comments in response to the Notice of Proposed Rulemaking and Notice of Inquiry (“*NPRM & NOI*”) regarding Mobile Satellite Service spectrum.¹ In the *NPRM & NOI*, the Federal Communications Commission (“FCC” or “Commission”) recognized the critical importance of retaining market-wide MSS capability. And commenters widely agree,² providing example-after-example of the irreplaceable role that the mobile satellite industry plays in our nation’s communications infrastructure. The record extensively documents the critical role that MSS systems have played during national emergencies, such as Hurricanes Katrina and Rita, as well as international emergencies, such as the recent earthquakes in Haiti and Chile. MSS systems also serve the critical and secure needs of the Department of Defense and other federal users, and have proven vital for U.S. and Coalition Forces throughout the Middle East region. Additionally, Iridium and other MSS licensees provide maritime, aviation, machine-to-machine, and land/mobile communications,

¹ *Fixed and Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz*, Notice of Proposed Rulemaking and Notice of Inquiry, 25 FCC Rcd 9481 (2010) (“*MSS NPRM & NOI*”).

² All comments referenced herein were filed in ET Docket No. 10-142, on September 15, 2010.

often where no other communications providers offer service. The indispensable role of MSS service is beyond dispute.

Commenters therefore emphasize the importance of retaining market-wide MSS capability, and in particular, capability in the Big LEO band. Iridium and other commenters explain that demand for important and innovative MSS services has increased and will continue to grow. Just this past year, Iridium’s subscribers grew by approximately 16.8 percent.³ And due to exceptionally high demand for Iridium’s services during natural disasters and other emergencies, Iridium has been required to seek special temporary authority from the Commission to access additional spectrum. Going forward, next generation systems—like Iridium NEXT⁴—will provide new and enhanced services that will further tax MSS spectrum resources.

Given the increasing demand for MSS, the Commission must make available adequate spectrum to meet current and future needs. In particular, the Big LEO band should be retained primarily for MSS use, and any terrestrial use of this band must remain ancillary, or secondary, to MSS. Commenters agree that—if anything—the Commission should focus on modifying the 2 GHz band to meet its terrestrial goals. Unlike the Big LEO band, the 2 GHz band is not extensively used for MSS.

I. COMMENTERS WIDELY RECOGNIZE THE UNIQUE VALUE OF MSS, ESPECIALLY TO PUBLIC SAFETY AND NATIONAL SECURITY.

Iridium and other commenters agree with the Commission about the “importance of maintaining MSS to provide services ... to public safety and Federal government agencies, to

³ See Iridium Communications, Inc., Form 10-Q, Securities and Exchange Commission, at 20 (Aug. 9, 2010).

⁴ Iridium anticipates that the launch of Iridium NEXT will begin in early 2015.

rural areas, and during natural disasters.”⁵ As detailed in its opening comments, Iridium’s robust MSS system already provides critical communications services to first responders, the Federal Government, and other users and plays a vital role during national and international emergencies. Using the world’s largest commercial satellite constellation—which consists of sixty-six low-Earth orbiting (“LEO”), cross-linked satellites operating as a fully meshed network and supported by multiple in-orbit spares—Iridium offers satellite communications coverage of the entire Earth’s surface. Iridium already serves more than 383,000 subscribers worldwide, and in some parts of the world, Iridium is the only available communications connection.

Commenters highlight that MSS services are irreplaceable during emergency response and recovery because they function in areas where terrestrial services have degraded, have not been deployed, or are otherwise not available. Iridium and its partners, for example, have played a vital and growing role in communications during national and international emergencies, including during Hurricanes Katrina⁶ and Rita and the recent earthquakes in Haiti⁷ and Chile.⁸

⁵ *MSS NPRM & NOI*, ¶ 33.

⁶ Emergency responders relied heavily on MSS satellite systems in responding to Hurricane Katrina. But, contrary to the MSS ATC Coalition’s assertion, emergency responders did not use MSS/ATC terminals. *See* MSS ATC Comments at 10 (“MSS/ATC services offer public safety personnel and commercial customers the benefit of a ubiquitous, interoperable and redundant MSS/ATC network. For example, in the case of an emergency where traditional terrestrial networks fail or are unreachable, as was the case during and after Hurricane Katrina, MSS/ATC terminals will instantly and seamlessly operate with the satellite network, ensuring that emergency responders and customers have continued and immediate access to vital communications using the same MSS/ATC terminals they carry every day.”). At the time Hurricane Katrina struck, dual-mode MSS/ATC terminals were not publicly available.

⁷ For example, after the devastating earthquake in Haiti, Iridium and its partners delivered communications services critical to the coordination of relief and rescue efforts. Relief organizations—including United Nations agencies, the American Red Cross, FEMA, the U.S. Department of Defense, the U.S. State Department, the Mexican Red Cross and others—relied on Iridium handsets and equipment for their communications needs in Haiti.

Iridium's satellite communications network was also deployed in innovative ways to assist in the cleanup and recovery effort after the April 2010 explosion of the Deepwater Horizon oil rig and the subsequent oil spill in the Gulf of Mexico.⁹

Other commenters also recognize the critical role that MSS systems play in emergency response and recovery. The Mobile Satellite Users Association ("MSUA") agrees that "MSS networks are uniquely situated to meet the critical needs of emergency response providers and are immune from the kinds of natural and man-made disasters that can affect ground-based infrastructure."¹⁰ Similarly, the MSS ATC Coalition explains that "time and again MSS has proven to be the only service infrastructure capable of providing communications during times of crisis."¹¹ And Inmarsat points out that with MSS, "first responders and private industry around

⁸ Iridium's MSS services also play other roles in emergency preparedness and response. Since 2003, the U.S. National Oceanic and Atmospheric Administration ("NOAA") has depended on Iridium's services to operate its tsunami warning system, which utilizes satellite data links to transmit real-time data from deep ocean buoys. Iridium also provides emergency backup communications to a variety of hospitals. See Chris Kirkham, *Satellite Phone Firm Focuses on Crisis Network*, WASHINGTON POST, June 26, 2006, at D01 (detailing Iridium's provision of an emergency satellite phone network for MedStar Health, the nonprofit owner of Washington Hospital Center and Georgetown University Hospital).

⁹ By incorporating Iridium satellite transceivers into robots and buoys that can be deployed on site, researchers and other relief workers were able to monitor and track the movements of the oil spill in real time, greatly improving the efficiency of cleanup efforts. See, e.g., Sylvie Barak, *Using Cellular M2M Technology To Clean Up the Gulf*, RCR UNPLUGGED, <http://unplugged.rcrwireless.com/index.php/20100909/news/3282/using-cellular-m2m-technology-to-clean-up-the-gulf/> (Sept. 9, 2010); Therese Poletti, *Gulf Oil Disaster Showcases Need For Better Robotics*, MARKETWATCH, <http://www.marketwatch.com/story/gulf-oil-disaster-shows-need-for-better-robotics-2010-06-01> (June 1, 2010).

¹⁰ Comments of Mobile Satellite Users Association at 1 ("MSUA Comments").

¹¹ Comments of MSS ATC Coalition at 5 ("MSS ATC Coalition Comments").

the world have available a robust and quickly deployable communications alternative ... when the next natural disaster or other domestic crisis occurs and immediate connectivity is needed.”¹²

In addition to large-scale emergency response, military and other government users rely on MSS for mission critical and routine communications. Iridium, for example, explains that most U.S. civilian bureaus, agencies and departments, as well as the U.S. Department of Defense and U.S. Armed Forces, including U.S. and Coalition Forces in Afghanistan and Iraq, rely heavily on Iridium MSS communications services for defense and civilian operations.¹³ MSUA adds that “[d]efense users require voice and two-way data capability with global coverage, low latency, mobility and security, and often have no alternat[ive] terrestrial communication capability, or rely on MSS as an important backup system.”¹⁴ LightSquared notes that its “MSS satellites also provide vital redundancy for first responders and others in the public safety community.”¹⁵ And Inmarsat highlights the MSS service it provides to “FEMA, the National Guard, the U.S. military, state and local governments, [and] law enforcement personnel.”¹⁶

MSS also is relied on heavily for maritime, aviation, machine-to-machine, and land/mobile communications services, particularly by users that spend time out of reach of terrestrial communications services. Iridium’s maritime end-users, for example, depend on

¹² Comments of Inmarsat, Inc. at 13-14 (“Inmarsat Comments”).

¹³ In fact, the Department of Defense owns and operates a dedicated gateway compatible exclusively with Iridium’s network.

¹⁴ MSUA Comments at 2. *See also* Comments of New DBSD Satellite Services G.P., Debtor-in-Possession at 3 (“New DBSD Comments”) (DBSD points out that the “Commission consistently has found that MSS systems serve a vital and unique role in protecting the public safety.”).

¹⁵ Comments of Lightsquared Subsidiary LLC at 11 (“LightSquared Comments”).

¹⁶ Inmarsat Comments at 13.

Iridium’s global network for cutting edge e-Navigation and maritime safety information,¹⁷ and other high bandwidth ship-shore voice and data communications.¹⁸ Iridium also serves its aviation customers with a broad range of services including air-to-ground telephony and communications, air traffic control and air safety applications, and aviation passenger communications. Similarly, Inmarsat’s “satellites currently provide critical services and capabilities to users who could not otherwise access those services and capabilities—including users in the maritime, aviation, military, public safety, media, energy, and farming sectors.”¹⁹ And LightSquared’s “MSS satellites complement the terrestrial network by making it possible to provide service to rural areas that are not within range of terrestrial base stations.”²⁰ MSUA also explains that “MSS networks . . . provide internationally mandated safety services for maritime and aeronautical users” based on “their proven reliability, which has been demonstrated over the last 30+ years.”²¹

¹⁷ See Press Release: *Iridium Joins With Danish Maritime Safety Administration in the EfficienSea e-Navigation Project to Demonstrate Maritime Safety Information Broadcasts*, Iridium Communications Inc., Sept. 8, 2010, available at <http://investor.iridium.com/releasedetail.cfm?ReleaseID=505471>.

¹⁸ See, e.g., Press Release: *Norbulk Installs Iridium OpenPort(R) Across Fleet of Managed Ships in Move to Control Communication Costs*, Iridium Communications Inc., Sept. 7, 2010, available at <http://investor.iridium.com/releasedetail.cfm?ReleaseID=504989>.

¹⁹ Inmarsat Comments at 11.

²⁰ LightSquared Comments at 11.

²¹ MSUA Comments at 1.

II. THE RECORD EVIDENCE CLEARLY DEMONSTRATES THAT THE BIG LEO BAND IS ALREADY BEING EFFECTIVELY USED BY MSS PROVIDERS AND SHOULD BE RETAINED FOR MSS USE TO ENSURE MARKET-WIDE MSS CAPABILITY INTO THE FUTURE.

As detailed above, the Big LEO band—and other MSS bands below 2 GHz—already provide vital communications services to a broad array of users. And commenters anticipate that MSS providers below 2 GHz will need additional spectrum for future satellite services as demands on this spectrum continue to increase. During the past year alone, demand for Iridium’s services has grown 16.8 percent. Additionally, to support communications during national emergencies and natural disasters, large spikes in demand have at times exceeded Iridium’s spectrum capacity, requiring it to seek special temporary authority to meet demand. As explained in its opening comments, Iridium was granted special temporary authority to access additional spectrum to meet demand during Hurricane Katrina when it experienced a 3,000 percent increase in traffic in the region.²² Similarly, within the first forty-eight hours after the Haitian earthquake, Iridium’s satellite network experienced an 18,000 percent surge in commercial voice traffic to and from Haiti as non-governmental organizations, government agencies, and volunteers poured into the area. This sharp increase in demand once again required Iridium to seek special temporary authority from the Commission to utilize additional spectrum.²³ Looking forward, Iridium anticipates that with the new capabilities offered by Iridium NEXT, demand for its services will only continue to increase.²⁴

²² Public Notice, Policy Branch Information, Actions Taken, Report No. SAT-00324, File No. SAT-STA-20050923-00181 (Oct. 7, 2010).

²³ On January 15, 2010, the Commission granted Iridium STA for testing and operation of its MSS system for a period ending February 4, 2010, in support of relief efforts in Haiti. Public Notice, Policy Branch Information, Actions Taken, Report No. SAT-00661, File No. SAT-STA-20100115-00011 (Jan. 22, 2010). The Commission granted an extension until February 15, *Footnote continues on next page . . .*

Other commenters agree that the demand on MSS spectrum is poised to increase. Inmarsat points out that its “new, higher-speed MSS products will intensify further the need for MSS spectrum.”²⁵ And MSUA explains that “it is essential that any use of MSS spectrum for terrestrial mobile broadband is based on there being *no reduction* in the spectrum available for MSS, particularly as end user demand for MSS continues to increase.”²⁶ MSUA further explains that “[i]n the past, capacity constraints on MSS networks, particularly in the hotspots that occurred during disasters and other situations (such as Hurricane Katrina and Haiti), have already necessitated the FCC’s issuance of Special Temporary Authority to help the operators meet the increased demand.”²⁷

Given the current and projected demand for Big LEO services, commenters urge the Commission to ensure that spectrum allocated for MSS below 2 GHz remains primarily for MSS use. AT&T, for example, “shares the belief” in “the need to preserve satellite capability—

2010. Public Notice, Policy Branch Information, Actions Taken, Report No. SAT-00664, File No. SAT-STA-20100203-00018 (Feb. 5, 2010).

²⁴ Additionally, Iridium’s next generation constellation, Iridium NEXT, anticipated to begin launching in early 2015, will continue to enhance the company’s services. Iridium NEXT will give Iridium the capability to meet rapidly expanding demand for global mobile communications on land, at sea, and in the skies. By supporting new and enhanced services at faster speeds, Iridium NEXT will drive innovation in rapidly expanding areas, such as enterprise global voice and data connectivity, asset tracking and other machine-to-machine applications, as well as new data-centric applications. Iridium NEXT will also provide greater bandwidth and innovative higher-speed data applications to Iridium’s many public safety, first responder, and national defense customers.

²⁵ Inmarsat Comments at 25.

²⁶ MSUA Comments at 3 (“Due to new terminals supporting higher speed data, such as Inmarsat’s BGAN and Iridium’s OpenPort, as well as the advanced satellite devices which will operate on LightSquared and Globalstar’s next generation satellite networks, end user demand for MSS, especially in the Big LEO and L-Band, is growing sharply and will continue to increase.”).

²⁷ *Id.*

especially in those bands where systems are operating on a globally or regionally harmonized basis.”²⁸ AT&T further highlights that “Big LEO band MSS licensees currently offer consumer voice and data services on a worldwide basis”²⁹ and thus AT&T underscores “the importance of maintaining MSS to provide services for the needs of public safety and federal government agencies, for rural areas, and for those areas that have suffered severe damage during natural disasters.”³⁰ Similarly, MSUA “believes that any suggestion that spectrum within the ... Big LEO bands (which have been intensively used for many years around the world) should be permanently reallocated from MSS to terrestrial mobile broadband is misguided and would in any case be inconsistent with the United States’ international obligations.”³¹ If anything, the Commission should focus on encouraging MSS use of Big LEO. And any terrestrial use of spectrum in the band should remain truly ancillary to MSS. Altering the status quo would harm the important MSS services that Iridium currently offers and would curb future advances.

If the FCC insists on reallocating MSS spectrum for terrestrial service, other MSS bands are much better candidates. Commenters agree that the Commission is right to focus on the 2 GHz band as the best opportunity to identify spectrum for terrestrial wireless.³² Unlike the Big LEO band, adding primary Fixed and Mobile allocations to 2000-2020 and 2180-2200 MHz

²⁸ AT&T Comments at 14 (AT&T further recognizes that the “various MSS bands are in different stages of development and deployment.”).

²⁹ *Id.*

³⁰ *Id.*

³¹ MSUA Comments at 3.

³² See Inmarsat Comments at 32 (explaining that “if the Commission does decide to reallocate the 2 GHz band for terrestrial use, that decision should be limited to the 2 GHz band”); Iridium Comments at 9. See also MSS NPRM & NOI, ¶¶ 10-16.

bands that are co-primary with the existing MSS allocation would not displace existing MSS systems that are extensively utilizing the spectrum.

III. CONCLUSION

In sum, commenters widely agree that MSS providers below 2 GHz offer valuable communications services to first responders, government and military personnel, and other users through robust MSS systems that cannot be replaced by other terrestrial communications providers. To preserve sufficient MSS capability in the United States, the Commission should preserve the Big LEO band for MSS use, regardless of what the Commission does with 2 GHz MSS spectrum.

Respectfully submitted,

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